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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/733,213

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George S. Pabis

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EXAMINER

GREENE, DANIEL LAWSON

ART UNIT

PAPER NUMBER

3641

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/733,213

Applicant(s)

PABIS ET AL.

Examiner

Daniel L Greene Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9 and 10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12/11/2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Non-Final Rejection

Drawings

1. **New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application for the reasons set forth in the attached PTO-948 as well as those cited below.** Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

a. **The subject matter of this application admits of illustration by a drawing to facilitate understanding of the invention.** Applicant is required to furnish a drawing under 37 CFR 1.81(c). No new matter may be introduced in the required drawing. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). The admission requiring illustration is:

- 1.) located in the specification page 7, line 7 wherein a thimble insert assembly is required to prevent the dimples from exiting the dimple area
AND,
- 2.) how the shaft "14" is split in the location of the dimple area to allow the tendon to defect into the dimple area as disclosed on page 6, lines 26-27.

A thimble insert assembly is not illustrated in any of the drawings nor is there a "split".

b. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "72" has been used to designate both an shaft internal and external to guide thimble "50".

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended.

Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

c. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: "64" and "36". Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is

being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

- a. It is believed applicant has spelled the word LAPPED as LAPED throughout the specification, see for example page 5, lines 26, 29, 30, 33, etc. (not all inclusive). Applicant is requested to review the ENTIRE specification and correct the misspelling or submit to record the definition of the term LAPED.
- b. It also appears applicant has misspelled the word "deflect" at least in the abstract and on page 6, line 27.
- c. Typically identical numerals for identical structures are utilized throughout the specification and drawings. On several occasions applicant has referenced numerals in relation to each other that are not contained within the same drawing, for examples see page 4, lines 19-20 "top surface 38 of the top nozzle 52" and page 6, lines 25-27. It is requested that applicant review the entire specification for appropriate agreement of figure and numeral references.

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- d. **The abstract of the disclosure is objected to as explained more fully below AND because the terms tendon and dimple are not adequately described (See for example, section 6.)**

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. **The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.**

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Correction is required. See MPEP § 608.01(b).

Appropriate correction is required for all subsections (a-c) above.

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification is objected to under 35 U.S.C. 112, first paragraph, as failing to provide and adequate written description of the invention and as failing to adequately teach how to make and/or use the invention, i.e. failing to provide an enabling disclosure.

- a. It is notoriously well known in the art that thimble inserts are subjected to substantial vibration and wear as taught by US Patent 4,902,468 to Veronesi et al. There is no adequate description nor enabling disclosure as to how and in what manner applicant's invention will actually function as claimed, (i.e. as providing an operative embodiment.) According to claim 10, it appears that the thimble insert assembly must be in contact with the repair sleeve in order to prevent further deflection of said repair sleeve otherwise some deflection may take place. The specification fails to disclose how, in what manner and/or what is utilized to prevent wear (vibrational, relational, etc.) so as to enable the repair sleeve to be used with a moveable control component such that wear does not become a factor precluding such use of said sleeve. The specification also fails to disclose how and in what manner such contact of the sleeve with a thimble insert assembly, such as a control rod, does not preclude any desired movement of said control rod during operations, such as a scram.
- b. There is no adequate description nor enabling disclosure of what all is encompassed by the phrase "thimble insert assembly". Although page 7, lines 7-8 provides a few embodiments, it does not appear to be all-inclusive nor exclusive.
- c. There is no adequate description nor enabling disclosure as to how the tendons are positioned (extended) through the sleeve openings. Page 5, lines 1-5 state that the shaft is configured with a plurality of openings and that tendons

are subsequently positioned through the sleeve openings, implying that they are formed/placed/made separately.

d. There is no adequate description nor enabling disclosure as to the exact location of the "split" in the dimple area that allows the tendons to deflect. The specification page 6 lines 26-27, states that the shaft is split in the location of the dimple area to allow the tendon to defect (sic), however it appears that it is the tendons themselves that are supposed to perform the deflection. It is not clear how such "split" is utilized in order to allow said deflections.

e. There is no adequate description nor enabling disclosure as to how and what manner the repair sleeve is prevented from further deflection in a horizontal direction. (See claim 10)

Claim Objections

4. **Claims 9 and 10 are objected to for the reasons set forth in section 4 of the previous office action mailed 11/04/2004. Appropriate correction is required.**

Claim Rejections - 35 USC § 112

5. **Claims 9 and 10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement.** The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in

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the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention for the reasons set forth in section 3 above.

6. Claims 9 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Claim 9 recites the limitation "a dimple of a guide thimble " in line 8. There is insufficient antecedent basis for this limitation in the claim.

b. Claim 9 recites the limitation "the dimples" in line 10. There is insufficient antecedent basis for this limitation in the claim.

c. Claim 9 recites the limitation "nuclear fuel assembly" in line 10. There is insufficient antecedent basis for this limitation in the claim.

d. Claim 9 recites the limitation "at least two tendons extending through the openings". However the claim is vague and indefinite and unclear as to how and in what manner the at least two tendons are "extended" through said openings. Indeed, it seems applicant is providing an elongated sleeve opening designed to leave a elongated strip of metal (tendon), instead of creating said openings and then extending said tendons through said openings.

e. Claim 10 recites the phrase "further deflection of the repair sleeve in a horizontal direction". There is insufficient antecedent basis for the limitation

"further" since Claim 9 discloses that it is the tendons that deflect in an instance of a horizontal load NOT the repair sleeve.

f. Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). The term "tendon" in claim 9 is used by the claim to mean "an elongated strip of metal", while the accepted meaning is "a wire or cable bundle typically used in the manufacture of concrete nuclear reactor containment buildings to pre-stress said concrete ." See for example US Patents 3,965,630 and 3,893,270. The term is indefinite because the specification does not clearly redefine, including the metes and bounds of the term tendon, for example: whether the tendon is required to be attached at both ends, whether the tendon is material added to the structure or material left behind during the manufacturing process, etc.

g. Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). The term "dimple" in claim

9 is used by the claim to mean both an "indentation" and "a protrusion", while the accepted meaning is "an indentation." The term is indefinite because the specification does not clearly redefine, including the metes and bounds of the term, in addition to the fact that the specification and claims use the term dimple to mean two totally different concepts repugnant of each other. A protrusion is not a dimple, therefore claim 9 is vague, indefinite and incomplete as to how and in what manner dimples of the tendons may "project" into dimples of the guide thimble sleeve.

h. The term "snugly" in claim 9 is a relative term, which renders the claim indefinite. The term "snugly" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is not clear what all is meant by and encompassed by the term, since the term is relative it can be given no definite meaning and therefore the metes and bounds are accordingly undefined.

Claim Rejections - 35 USC § 102

7. Claims 9 and 10 are rejected under 35 U.S.C. 102(b) as anticipated by US Patent 4,684,498 to Paul alone or, in the alternative, under 35 U.S.C. 103(a) as

obvious over Paul in view of Merriam Webster's Collegiate Dictionary Tenth Edition.

Paul discloses a method comprising: providing a sleeve (48) (see for example Figures 2-7), said sleeve (48) having a shaft with a first end, a second end and a diameter, the diameter configured to fit into a guide thimble opening of a top nozzle of the fuel assembly, wherein the diameter of the shaft is dimensioned such that an exterior of the shaft snugly fits into the guide thimble opening, wherein the shaft has at least two openings (82), and at least two tendons extending through the openings (reads on the 4 parts of lower portion (70) since the term tendon as used by the specification does not connote any particular structure), the tendons configured to deflect in an instance of a horizontal load on the tendon (see for example column 8, lines 4-5), the tendons having a dimple (80) configured to be inserted into a dimple (76) of a guide thimble sleeve (44); and inserting the sleeve (48) in the guide thimble opening in the top nozzle (40) of the nuclear fuel assembly such that said dimples (80) of said tendons project into said dimples (76) of said guide thimble sleeve (44); and inserting a thimble insert assembly into an interior of the repair sleeve (reads on a control rod being inserted into the control rod guide thimble) in Figures 1-7, column 7, lines 43+, and column 8, lines 1-11.

It is noted that applicant's the claim language for the term repair sleeve reads on sleeve (48) of Paul since Paul is clearly capable and intended for repairing a nuclear fuel assembly.

It is also noted that the term bulge reads on the terms dimples of the tendons and guide sleeve, as a bulge is nothing more than a plurality of closely located dimples. In any event, Merriam Webster's Collegiate Dictionary Tenth Edition page 325 may be resorted to showing that a "dimple" is defined as "a depression or indentation on a surface" which supports the examiners contention that Paul inherently shows tendon and guide thimble sleeve dimples as recited in applicant's claims.

Paul is clearly capable of the limitations disclosed in claim 10, wherein the step of inserting the thimble insert assembly into the interior of the sleeve inherently prevents further deflection of the sleeve in a horizontal direction since the sleeve will only be able to deflect horizontally towards the thimble insert assembly until said thimble insert assembly contacts with and physically prevents any further horizontal motion of said sleeve.

As to limitations which are considered to be inherent in a reference, note the case law In re Ludtke, 169 USPQ 563, In re Swinehart, 169 USPQ 226, In re Fitzgerald, 205 USPQ 594, In re Best et al, 195 USPQ 430, and In re Brown, 173 USPQ 685,688.

Response to Arguments

8. Applicant's 2/25/2005 arguments with respect to claims 9 and 10 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure as showing the current state of the art in dimple and sleeve usage.

10. Examiner's Note: Examiner has cited particular columns and line numbers in the references as applied to the claims for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel L Greene Jr. whose telephone number is (571) 272-6876. The examiner can normally be reached on Mon-Fri 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael J Carone can be reached on (571) 272-6873. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DIG 
5/12/2005



**HARVEY E. BEHREND
PRIMARY EXAMINER**